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Certified Article Number

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SENDERS RECORD

December 20, 2011

Anne Foster
U.S. Environmental Protection Agency, Region 6
Superfund Division (6RC-S)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Via Certified Mail Return Receipt Requested

Certified Article Number

7196 9008 9040 0646 0830

SENDERS RECORD

Jessica Hernandez
Office of Regional Counsel
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Via Certified Mail Return Receipt Requested

Re: San Jacinto River Waste Pits Superfund Site

Dear Anne and Jessica:

This letter and the attached Anchor QEA report dated December 2011 ("Anchor Report" – see Exhibit A) are being submitted to the United States Environmental Protection Agency ("EPA") Region 6 on behalf of Respondents, McGinnes Industrial Maintenance Corporation ("MIMC") and International Paper Company ("International Paper") (hereinafter collectively referred to as "Respondents") to provide documentation regarding the activities of three companies – Big Star Barge & Boat Company, Inc. ("Big Star"), Houston International Terminal, Inc. ("HIT") and MegaSand Enterprises, Inc. ("MegaSand") – at, or in the vicinity of, the San Jacinto River Waste Pits Superfund Site ("Site"). This submission is being made pursuant to our prior discussion with you in order to explain why these companies should be designated as Potentially Responsible Parties ("PRPs") at the Site pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"). Much of the information provided as part of this letter was submitted to EPA previously, first in a presentation made to EPA in August 2009 and on several occasions during the course of efforts to obtain access to the property then owned by Big Star and now owned by San Jacinto River Fleet, LLC ("SJRF") that is located west of the waste impoundments at the Site.

The Anchor Report demonstrates that the dredging activity conducted by and for Big Star, HIT and MegaSand (collectively referred to herein as the "Dredging PRPs") has had a

significant impact on the Site. The technical information presented in the Anchor Report demonstrates that the Dredging PRPs' dredging activity (i) undercut the levee on the northwest corner of the Site surface impoundments, (ii) conveyed wastes (and other materials such as sand, silts, and clays located beneath and in the impoundments) from the impoundments via a dredge pipe to Big Star's dry land property where sand separation activities were carried out, creating a "hot spot" of dioxin contamination at the water/land interface along the northeast corner of the Big Star dry land property, and (iii) compromised the integrity of the levees on the north, northeast and east sides of the Site surface impoundments by creating a new preferential pathway for the river which then produced a scour channel along the north, northeast and east sides of the Site, further eroding the impoundment levees.

In addition to the Anchor Report, the designation of Big Star, HIT and MegaSand as PRPs is supported by the following:

1. Information from U.S. Army Corps of Engineers Files and CERCLA §104(e) Responses

We have reviewed the U.S. Army Corps of Engineers ("Corps") file on HIT Permit No. 19284. This file relates to the dredging of sand in the area between Big Star's dry land peninsula and the Site impoundments and the area to the north of such impoundments.

These records show that HIT obtained a sand dredging permit (No. 19284) from the Corps on May 11, 1992 (for a term to expire on December 31, 1995), and subsequently obtained extensions of the term of Permit No. 19284 on December 21, 1995 (extension to December 31, 1999), January 23, 2003 (extension to December 31, 2008) and December 27, 2007 (extension to December 31, 2013, at which time a new permit designation – Department of the Army (DA) SWG-2007-01865 – was assigned to the permit) (*see* attached Exhibits B-1, B-2, B-3 and B-4). Permit No. 19284 was also modified by the Corps on September 27, 1996 (*see* Exhibit B-5). This permit was later suspended by the Corps pursuant to a letter dated May 18, 2009 due to the suspension of the 401 Water Quality Certification for DA Permit SWG-2007-01865, as a result of concerns about re-suspension of sediments and dioxin contamination (*see* Exhibit B-6).

The dredging permit was obtained by HIT based on its representation that it owned the property where sand dredging was to be conducted (*see* the attached HIT application dated December 7, 1990, marked as Exhibit C). In fact, a review of Harris County property records has shown that HIT never held title to property in this area (or anywhere else). Rather, title to the property that HIT claimed was actually (at least prior to its inundation by the San Jacinto River) in the name of Big Star, HIT's sister corporation. Big Star and HIT admitted this in response to Question No. 8 of EPA's CERCLA §104(e) requests for information sent to both companies (*see* attached responses to information requests, marked as Exhibits D-1 and D-2). The property records included as a part of Exhibit D-1 indicate that the property immediately to the north and west of the tract on which the Site waste impoundments are located ("Tract"), including the dry land peninsula located to the west of the Site impoundments, was owned by Big Star. The bulk of the property was purchased on August 27, 1980 (including all the property

where the sand dredging activities occurred). HIT, however, signed the recently recorded deed conveying the Big Star property to SJRF, with the deed document stating that HIT was doing so in order to convey whatever interest it might have in the property (*see* attached copy of the deed marked as Exhibit E).

Permit No. 19284 contained a map showing the area in which HIT was authorized to dredge (*see* attached Exhibit B-1). This dredging area did not extend to the Tract. Moreover, based on the transcript of the recorded statement given by Captain Jack Roberts, then President of both HIT and Big Star, to Ms. Barbara Aldridge of EPA Region 6, dated November 14, 2005, Captain Roberts had actual knowledge of the waste disposal operations that had been conducted on the Tract (*see* attached Exhibit F, p. 10, lines 1-6). Captain Roberts also stated that he had knowledge of the waste disposal activities in a letter he wrote to EPA dated June 2, 2005 (*see* attached Exhibit G). Thus, Captain Roberts, as president of both HIT and Big Star, knew that the dredging activities could impact the waste impoundments, particularly if the dredging activities extended beyond the permitted boundary of such activities.

The Corps' records also show that MegaSand dredged sand pursuant to Permit No. 19284, under contract with HIT (*see* attached Exhibits H-1, H-2 and H-3). A copy of the contract between HIT and MegaSand was obtained by EPA pursuant to its 104(e) request to HIT (*see* attached Exhibit D-2). MegaSand also admitted dredging in the vicinity of the Site impoundments in its response to Question 5 of the CERCLA §104(e) request for information sent to it by the EPA (*see* Exhibit I).

2. Impact of Dredging Activity on Areas to the North and West of the Site Waste Impoundments

Based on aerial photographs of the Tract and surrounding areas taken in 1966, 1995, 1998 and 2002, and as explained in the Anchor Report (*see* Figures 2-5 of the Anchor Report), it appears that the levees surrounding the Site waste impoundments were intact until dredging commenced west and north of the impoundments pursuant to HIT Permit No. 19284 in late 1997.

The aerial photographs show that by the time the 1998 aerial photograph (Anchor Report, Figure 4) was taken, a portion of the levee along the northwest portion of the Site waste impoundments had been knocked down. As discussed in the Anchor Report, bathymetric surveys of the northwest corner of the Site waste impoundments show that dredge line cuts through this area of the impoundments. Thus, it is clear that the dredging activities conducted by the Dredging Parties in the late 1990's pursuant to HIT Permit No. 19284 resulted in the undercutting and collapse of portions of the perimeter levee in this area of the impoundments.

The Anchor Report also describes a sand separation operation that was located on the Big Star dry land property and describes how the dredging operation caused material from the Site waste impoundments to be transported via a dredge pipe to the Big Star dry land property, where

a hot spot of contamination was created. This activity appears to be associated with dioxin present in the San Jacinto River, as depicted on Figure 10 of the Anchor Report.

3. Impact of Dredging Activity on the North, Northeast and East Levees of the Site Waste Impoundments

As previously noted, based on the aerial photographs, the levees surrounding the Site waste impoundments were intact until dredging commenced in the late 1990's.

As described more fully in the Anchor Report, the aerial photographs and the bathymetric surveys show that not only did the dredging result in the collapse of the levee on the northwest corner of the impoundments, but that the dredging activity also resulted in the erosion and deterioration of the levees on the north, northeast and east sides of the impoundments. The attached Anchor Report explains how the dredging activity created a preferential channel that eroded away the levees in these locations (*see* Figures 7 and 8 of the Anchor Report and associated discussion).

4. Qualification of Big Star, HIT and MegaSand as PRPs

Big Star, HIT and MegaSand qualify as PRPs due to their dredging activities for the following reasons:

1. Big Star is a past owner of the property on which dredging and/or sand separation activities occurred. These activities occurred with Big Star's knowledge and consent as Big Star's president was also the president of HIT, which obtained the USACE permit for such activities.
2. Given the recently recorded deed (*see* Exhibit E) and HIT's representations regarding its ownership of the Big Star Property, HIT should also be considered a past owner of the Big Star property. In addition, HIT, as the permittee for the dredging activities in the area, is a past operator and an arranger for the disposal of waste from the Site waste impoundments onto the Big Star property.
3. MegaSand, the company that dredged the area, is an arranger, a transporter of the waste from the impoundments to the Big Star property, and an operator of the dredging equipment that undercut the levees of the impoundments.

Moreover, Big Star is not exempt from CERCLA liability under either of the exemptions that were previously raised by EPA counsel, Barbara Nann, in addressing Big Star's status. The reasons why Big Star is not exempt were explained in the attached email dated December 10, 2010, from the undersigned to Ms. Nann (*see* Exhibit J).

Anne Foster
Jessica Hernandez
U.S. Environmental Protection Agency, Region 6
December 20, 2011
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For the reasons set out above, International Paper and MIMC respectfully request that EPA provide notice to Big Star, HIT and MegaSand of their status as PRPs at the Site.

Please do not hesitate to call if you have any questions.

Sincerely,



Albert R. Axe, Jr.

Attachments

ARA/mr

cc:	Barbara Nann	<i>Via Electronic Mail</i>
	Gary Miller	<i>Via Electronic Mail</i>
	Valmichael Leos	<i>Via Electronic Mail</i>
	John Cermak	<i>Via Electronic Mail</i>
	Sonja Inglin	<i>Via Electronic Mail</i>
	David Keith	<i>Via Electronic Mail</i>

EXHIBIT A

IMPACT OF DREDGING ON THE SAN JACINTO RIVER WASTE PITS TIME CRITICAL REMOVAL ACTION SITE

Prepared for

McGinnes Industrial Maintenance Corporation
International Paper Company

Prepared by

Anchor QEA, LLC
614 Magnolia Avenue
Ocean Springs, Mississippi 39564

December 2011

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1 BACKGROUND AND OBJECTIVE

The San Jacinto River Waste Pits Superfund Time Critical Removal Action Site (TCRA Site) consists of a set of impoundments approximately 15.7-acres in size, built in the mid-1960s for disposal of paper mill wastes (Impoundments). The TCRA Site, as defined by U.S. Environmental Protection Agency (USEPA), also includes the surrounding areas containing sediments and soils potentially contaminated with the waste materials that had been disposed in the Impoundments. The Impoundments are located on a 20-acre parcel on the western bank of the San Jacinto River, in Harris County, Texas, immediately north of the Interstate Highway 10 (I-10) Bridge (Figure 1).

In 1965, the Impoundments were constructed by forming berms within the estuarine marsh, just north of what was then Texas State Highway 73 (now I-10), to the west of the main river channel. The two primary Impoundments at the TCRA Site were divided by a central berm running lengthwise (north to south) through the middle.

In 1965 and 1966, pulp and paper mill wastes were reportedly transported by barge and unloaded at the TCRA Site into the Impoundments. The wastes deposited in the Impoundments have been found to contain polychlorinated dibenzo-p-dioxins, polychlorinated furans (dioxins and furans), and some metals (TCEQ and USEPA 2006). Physical changes at the TCRA Site in the 1970s, 1980s, and 1990s, including regional subsidence of land in the area due to large-scale groundwater extraction and sand mining, within the River and marsh to the west and north of the Impoundments, resulted in the partial submergence of the berms and exposure of the contents of the Impoundments to surface waters.

Based on permit file reviews, aerial photograph interpretation, recent bathymetric survey results, and an evaluation of the distribution of dioxin in surface sediments surrounding the TCRA Site, sand mining-related dredging occurred in the vicinity of the perimeter berm at the northwest corner of the Impoundments in 1997.

The bathymetric data near the TCRA Site show water depths greater than 16 feet at the toe of the slope, along the northwestern shoreline of the Impoundments and in an area that prior

to any dredging activity was near zero elevation (an intertidal marsh when the Impoundments were constructed). The dredging activities that created the deep basin adjacent to the Impoundments today undermined and removed the impoundment berms in that area. The dredging north, northwest, and west of the TCRA Site also altered the path of the main flow channel of the river, creating a scour channel adjacent to the north and east containment berms of the TCRA Site. The change in flow appears to have contributed to the erosion of the north and east berms of the Impoundments.

This memorandum evaluates different lines of evidence that demonstrate that historical dredging and sand mining operations proximal to the TCRA Site adversely affected the TCRA Site physiography and released waste containing dioxins/furans that would have otherwise remained within the Impoundments. Information about the historical dredging and sand mining operations was obtained from records in U.S. Army Corps of Engineers (USACE) files, including USACE-approved dredging permits and associated correspondence. Documents from the USACE files indicate that dredging by third parties occurred in the vicinity of the perimeter berm at the northwest corner of the TCRA Site Impoundments as late as 2001. Relevant documents from the USACE files are included in the attached Appendix A.

The lines of evidence that show the impact of the dredging and sand mining operation are:

- Changes in the physical state of the TCRA Site evident from aerial photographs.
- Aerial photographic evidence of dredging operations and sand separation activities at the property formerly owned by Big Star Barge & Boat Company, Inc. (Big Star property) located west of the TCRA Site.
- Bathymetric data that show the extent of dredging at the TCRA Site based on the identification of abrupt dredge cut escarpments in the area surrounding and within the TCRA Site.
- The presence of the highest observed concentrations of dioxins/furans found outside of the TCRA Site Impoundments coincident with discharges observed in aerial photographs of the Big Star property in sediment datasets collected by TCEQ in 2005 and in the Remedial Investigation/Feasibility Study (RI/FS) by the Respondents (Anchor QEA and Integral 2010).

2 AERIAL PHOTOGRAPHIC OBSERVATIONS

Sequential review of aerial photographs covering the period from 1966 to 2002 (Figures 2 through Figure 6) indicate that, beginning in the late 1990s, dredging near and within parts of the TCRA Site compromised the integrity of the berms surrounding the TCRA Site, and caused significant changes to the river physiography in this area. Important observations from the aerial photographic review are provided below:

- On Figure 2 (1966 conditions), the integrity of the berms surrounding the Impoundments is clearly shown. Figure 2 also depicts evidence of early dredging in the area north and west of the TCRA Site, shown by the linear cuts into the marsh with leading arcs at the limits of dredging into the shoreline. The arcs are indicative of a dredge “swing” as it advances into the shoreline to mine materials, and similar features can be observed in more recent aerial photographs of the area. Typical sand dredging operations are described in the attached Appendix B.
- Figure 3 shows Site conditions in the year 1995. Important observations from this figure include: 1) the relatively straight western and northwestern shoreline of the Impoundments, 2) the straight shore line on the east side of the Big Star property to the west, and 3) the straight shore line along the Texas Department of Transportation (TxDOT) right-of-way north of I-10, between the TCRA Site and the Big Star property. Also of note is the submerged vegetation around the TCRA Site, the Big Star property, and the wetlands north and west of the TCRA Site. As shown in later aerial photographs and discussed below, these features are impacted and changed significantly by dredging operations that occurred between 1997 and 2002.
- Figure 4, an aerial photograph taken in 1998, shows a breach in the edge of the northwestern berm of the TCRA Site, apparently caused by undermining in this area by dredging. This photograph also shows significant changes on the Big Star property and the shoreline of the eastern side of the Big Star property. Note the alluvial fan-like deposit along the eastern shoreline of the Big Star property, in what appears to be a newly formed mass of intertidal sediment. In addition, a plume of turbid water is emanating from the new sediment mass.
- Site conditions in the year 2002 are shown on Figure 5. In this photograph, the original berm failure observed in 1998 (Figure 4) is exacerbated to approximately twice the previous size. It is also important to note that a substantial amount of

newly deposited sediment is present along the shoreline of the TxDOT right-of-way between the Big Star property and the TCRA Site. Based on our review of the USACE files for the sand dredging permit in this area, it is our understanding that mitigation along this shoreline was required as part of the USACE permitting process to offset dredging impacts. Also, and more importantly, there are several prominent arced dredge cut shapes, from the Big Star property to the Impoundments, further indicating degradation of the berm in the northwestern part of the Impoundments by dredging. Finally, tidal flow lines along the northeastern side of the Impoundments clearly bend around the Impoundments and into the navigation channel under the bridge, indicating that a new preferential flow path has formed in this area of the Impoundments. There is further evidence of channeling in this area in later aerial photographs, and in recent bathymetric data discussed below.

- Figure 6 shows an interpretation of possible dredging operations and impacts based on the 2002 aerial photograph, including dredge cut arcs and dredged material drainage/decant from a sand separation system to the River. All of the features on the Big Star property, and between the Big Star property and the Impoundments described above (see Figure 4 through Figure 6), are consistent with features that would be associated with dredging and sand mining operations.
- Figure 7 shows the conditions in 2009. The edge of the northern berms appear further degraded, potentially by changes in the local flow regime that resulted from dredging. Although the newly deposited sediment seen first in 2002 along the south shoreline between the TCRA Site and the Big Star property continues to be present, it appears that the use of the Big Star property for sand separation activities has ceased.
- In addition to the direct impacts to the Impoundment berm in the northwestern portion of the TCRA Site (resulting from physical removal of the TCRA Site berms by dredging), Figure 7 also shows that the dredging operations have undercut portions of the northern berms surrounding the TCRA Site. A new channelized bottom is apparent from just off of the central berm shoreline towards the eastern/southeastern area of the TCRA site (Figure 7). This feature indicates that the deeper water areas produced by the dredging apparently increased flow from the river over the area. This increase flow and its associated erosive forces likely caused further degradation

of the berms at the northern and eastern portions of the Impoundments. This feature is more apparent in bathymetric data discussed later in this memorandum and shown on Figure 8.

From these aerial photographs, it is apparent that dredging operations were conducted in the area between 1966 and 2002, with dredging approaching the TCRA Site as early as 1997. Concurrent with this dredging operation, sudden (i.e., not due to natural riverine processes that are much more gradual) degradation and breaching of the TCRA Site berms is evident, as well as relocation of a substantial amount of sediment, including redeposition of fine grained material from sand separation activities at the eastern edge of the Big Star property. In addition, it appears that an additional flow channel with higher velocity currents was created adjacent to the TCRA Site berms as a result of the dredging operation that began in the 1997 timeframe. This flow channel caused erosion of the berms surrounding the Impoundments.

3 BATHYMETRIC OBSERVATIONS

To further illustrate the extent of dredging adjacent to the TCRA Site, bathymetry from 2009 was overlain on the 2002 aerial photograph (Figure 8). The more tightly spaced bathymetric lines on this figure indicate steep slopes where the surface of the bottom of the river is changing very rapidly. It is readily apparent that a substantial depression was formed west of and adjacent to the TCRA Site. Especially noteworthy is the unnatural underwater escarpment between the TCRA Site and the Big Star property, as well as several arced dredge cuts. Dredging in this area undermined and removed the berms on the northwest side of the TCRA Site. This is confirmed by the sudden and abrupt slopes on the river bottom to the west, northwest, and parallel to the north shoreline of the TCRA Site, which are not natural slopes and occurred as a result of the dredging processes, described above and in Appendix B that began in the 1997 timeframe. Also evident from the bathymetry is the channelized bottom adjacent to the northeast and east portions of the TCRA Site, which is also associated with dredging activities.

To further illustrate the magnitude of the dredging that has occurred in this area, Figure 8 (2002 conditions and recent bathymetry) has been provided in reduced size on Figure 9, shown adjacent to the 1966 aerial photograph (provided earlier as Figure 2), the latter depicting the original flat topography in the same area as the dredging activity. Comparison of the conditions adjacent to and west of the TCRA Site from these two photographs enables easy identification of the substantial effects of dredging activities in this area. It should be noted that the emergent marsh areas that were at or near sea level after construction of the TCRA Site Impoundments (as shown in the 1966 aerial photograph), are now up to 20 feet deep adjacent to the TCRA Site. This drastic and varied change in elevation can only be explained by the removal of materials by the dredging operations documented in the USACE permit files.

4 CHEMICAL DATA

Chemical data provided in the draft Preliminary Site Characterization Report (PSCR) submitted to USEPA provides a third line of evidence that dredging adjacent to and near the TCRA Site has redistributed dioxins/furans that would have otherwise not been transported from the TCRA Site under natural conditions. Figures 6-11, 6-12, and 6-15 from the draft PSCR (Integral and Anchor QEA 2011) (attached as Appendix C) depict surface/subsurface sediment and soil data (nanograms per kilogram [ng/kg] dry weight) for dioxin/furan toxicity equivalents from on the TCRA Site and the surrounding area, including the Big Star property.

On Figure 6-11 provided in Appendix C, the only detection of dioxins/furans in intertidal sediment/soil outside the TCRA Site (or immediately adjacent to the original TCRA Site berms) exceeding 100 ng/kg is on the northeast portion of the Big Star property (195 ng/kg). All other detections of dioxins/furans outside the TCRA Site (or immediately adjacent to the original TCRA Site berms) depicted on Figure 6-11 are more than approximately 80% less than the one 195 ng/kg detection on the Big Star property. This area of the Big Star property corresponds with the area of the sediment deposits that formed during sand mining and sand separation activities from 1997-2002, as shown in the aerial photographs discussed above (see Figure 4 through Figure 6).

On Figure 6-12 contained in Appendix C, which depicts surface sediment dioxin/furan data, only two detections of dioxins/furans exceeding 100 ng/kg are found outside the immediate vicinity of the TCRA Site Impoundments (121 and 153 ng/kg); these detections were in the northeast portion of the Big Star property. Similar to the distribution of dioxins/furans depicted on Figure 6-11, the remaining data on Figure 6-12 outside the immediate vicinity of the TCRA Site are at least 80% less than these two detections just offshore of the Big Star property. Again, these areas are coincident with sediment deposits that formed off of the Big Star property during sand mining and sand separation activities discussed above (see Figures 4-6).

Finally, on Figure 6-15 (subsurface core data) in Appendix C, the only detections of dioxins/furans outside the TCRA Site exceeding 100 ng/kg are also at the northeast portion of

the Big Star property. These particular detections are found at 0-1, 3-4, and 5-6 feet below grade, and are in the portion of the Big Star property that was apparently used for discharging fine grained materials from the sand separation activities back to the river (see Figure 4 and Figure 6).

In summary, the dioxin/furan data shown on Figures 6-11, 6-12, and 6-15 of the Draft PSCR (provided in Appendix C) indicate an anomalous presence of elevated concentrations of dioxins/furans at the northeast portion of the Big Star property (coincident with the historic sand separation and sediment dewatering operations in this area based on the aerial photograph record). Both upstream and downstream concentrations of dioxins and furans for the same matrices are far less (i.e., ~80% less) than those noted on, and adjacent to, the Big Star property. Finally, as an additional visual aid illustrating the general distribution of TEQs in the area and supporting the data and conclusions provided above, Figure 10 provides 2005 TEQ data in surface sediments. These older data are consistent with the newer data described above and also show the highest levels of TEQs outside the Impoundments as being present on the Big Star property.

5 SUMMARY AND CONCLUSIONS

The aerial photographs, permits review, and the bathymetric and chemical data show distinct evidence of dredging impacts adjacent to and within the northwestern portion of the TCRA Site, including:

- The presence of scalloped shorelines (dredge swing arcs) and steep underwater escarpments produced by dredging, and continual encroachment of dredging impacts from the north and west in 1966 towards the Impoundments through 2002.
- The undermining and loss of the berm and other materials in the northwestern and northeastern portion of the TCRA Site from 1997 through 2002.
- Discharge of sediments from the Big Star property from the sand separation and dewatering operations coincident with the dredging from 1997 through 2002, resulting in the deposition of contaminants in the alluvial deposits and north of the Big Star property.
- Evidence of the re-distribution of dioxins and furans in sediment and soil on and adjacent to the Big Star property – the highest concentrations of dioxins and furans observed in TCEQ and RI/FS data from outside the immediate vicinity of the TCRA Site – are associated with known discharge areas from sand separation and dewatering operations on the Big Star property that occurred during the dredging operations.

6 REFERENCES

- Anchor QEA and Integral Consulting, Inc., 2010. Remedial Investigation/Feasibility Study Work Plan San Jacinto River Waste Pits Superfund Site. Prepared for McGinnes Industrial Maintenance Corporation, International Paper Company, and U.S. Environmental Protection Agency, Region 6. Anchor QEA, Ocean Springs, MS and Integral Consulting, Inc., Seattle, WA.
- TCEQ and USEPA, 2006. Screening Site Assessment Report San Jacinto River Waste Pits, Channelview, Harris County, Texas. TXN000606611. Texas Commission on Environmental Quality and U.S. Environmental Protection Agency.

FIGURES



Figure 1
TCRA Vicinity Map
Impact of Dredging on the San Jacinto Waste Pits TCRA Site
SJRWSP Superfund Site/MIMC and IPC

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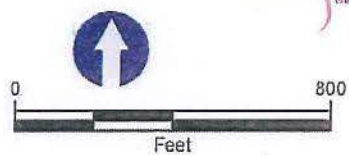
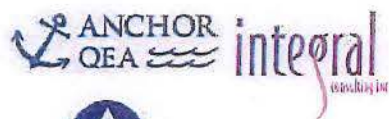


Figure 2
1966 Aerial Photo
Impact of Dredging on the San Jacinto Waste Pits TCRA Site
SJRWSP Superfund/MIMC and IPC

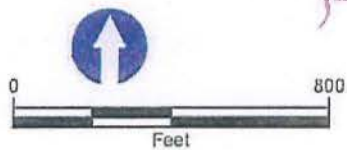
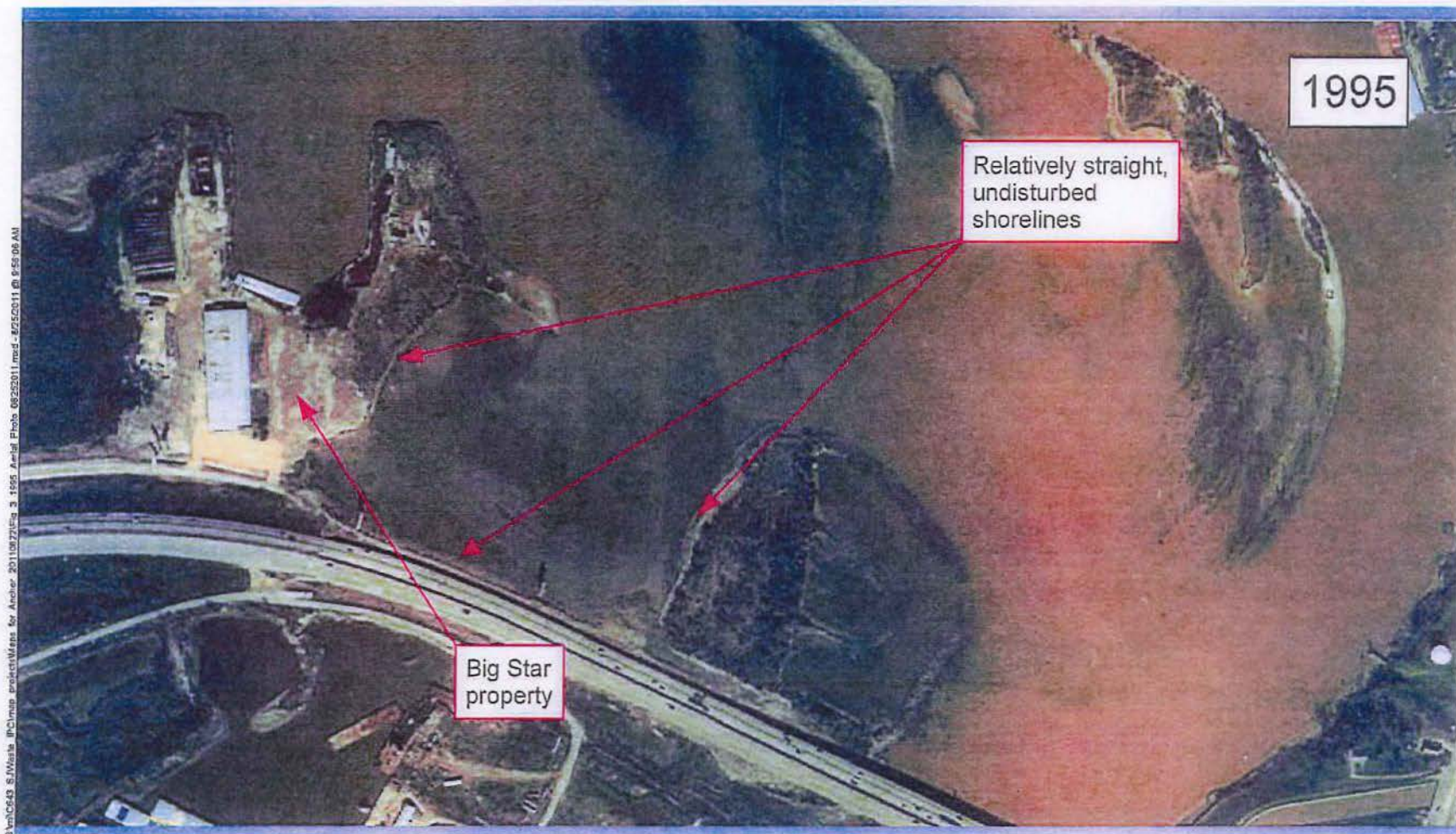


Figure 3
 1995 Aerial Photo
 Impact of Dredging on the San Jacinto Waste Pits TCRA Site
 SJRWP Superfund/MIMC and IPC

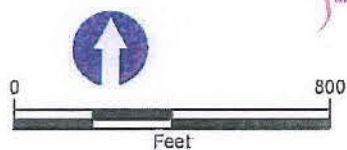
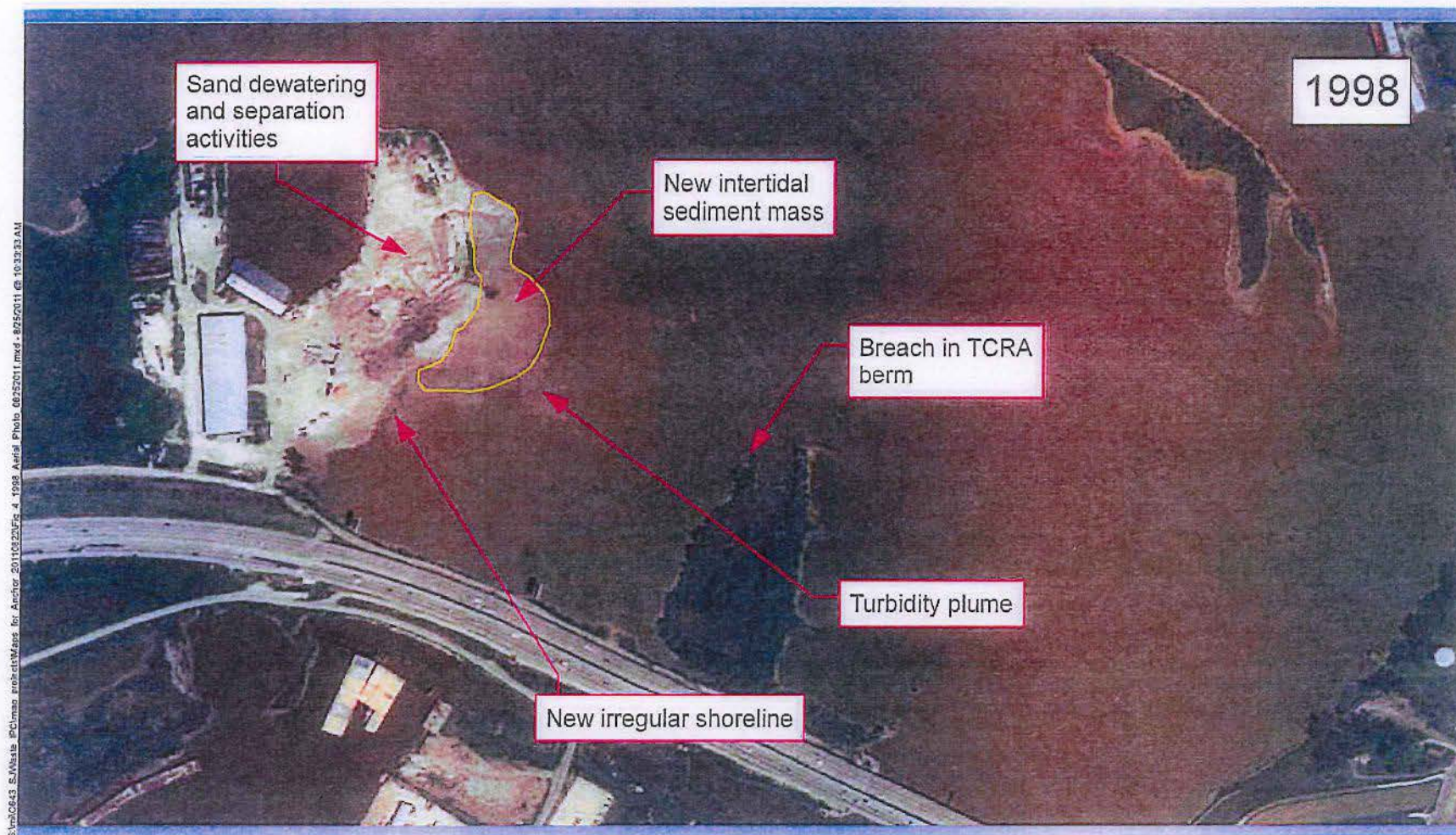


Figure 4
 1998 Aerial Photo
 Impact of Dredging on the San Jacinto Waste Pits TCRA Site
 SJRWP Superfund/MIMC and IPC

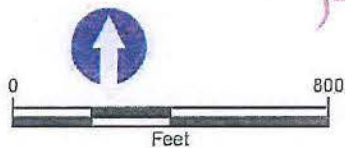
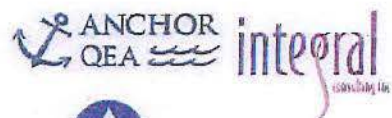
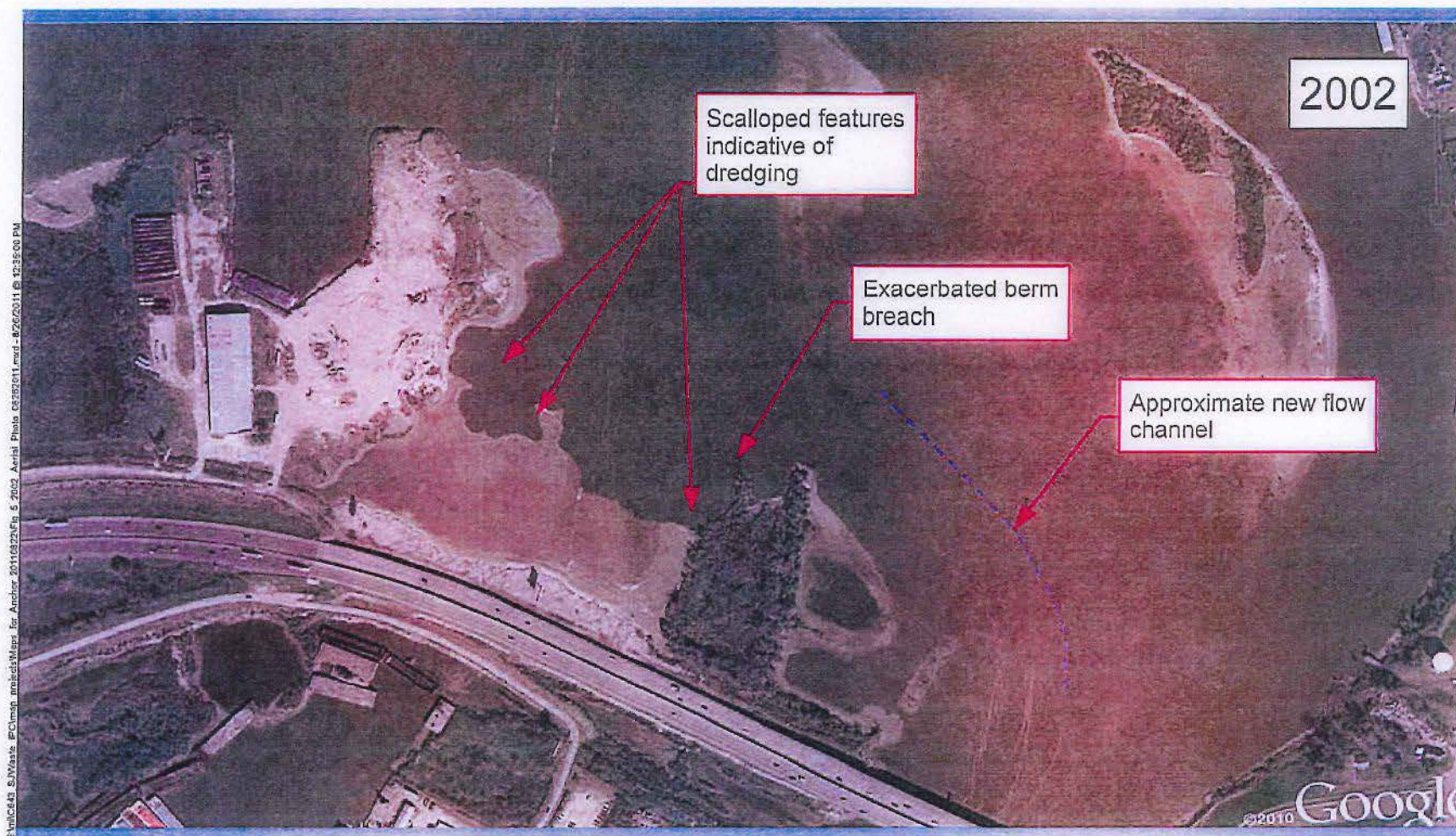


Figure 5
2002 Aerial Photo
Impact of Dredging on the San Jacinto Waste Pits TCRA Site
SJRWSP Superfund/MIMC and IPC

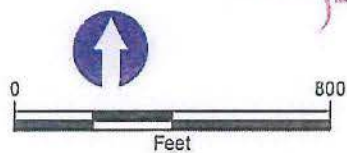
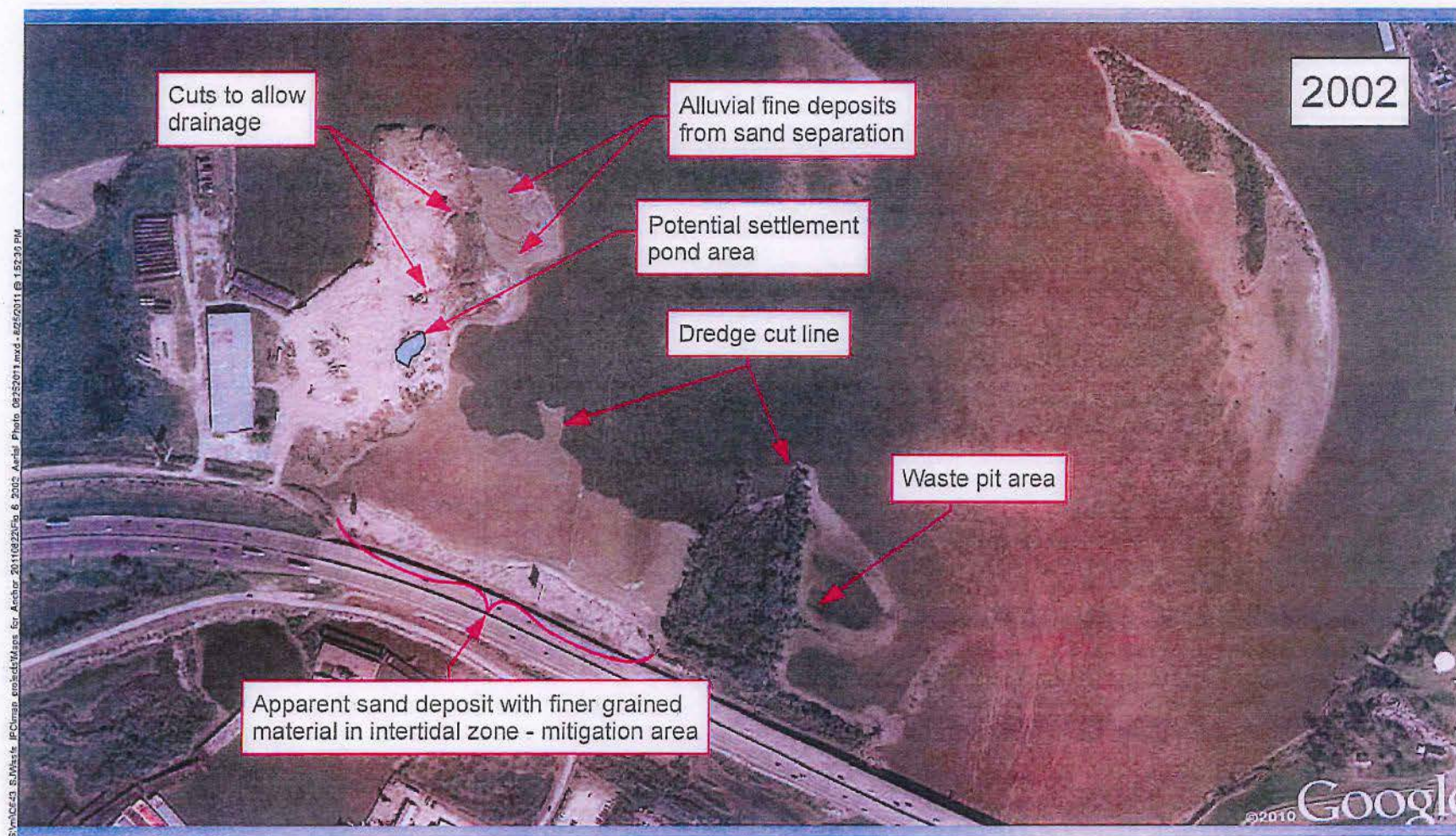


Figure 6
2002 Aerial Photo
Impact of Dredging on the San Jacinto Waste Pits TCRA Site
SJRW Superfund/MIMC and IPC

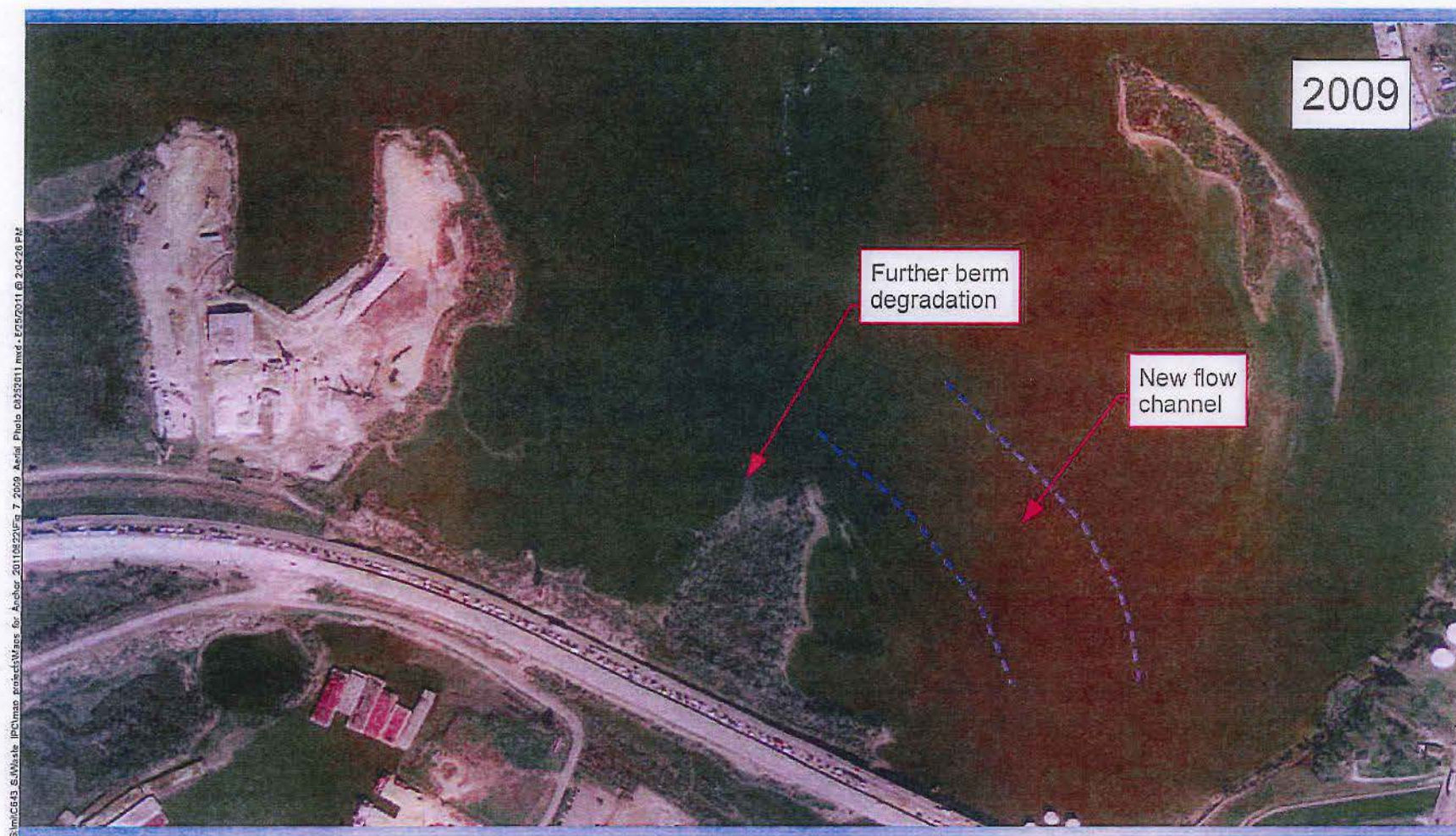
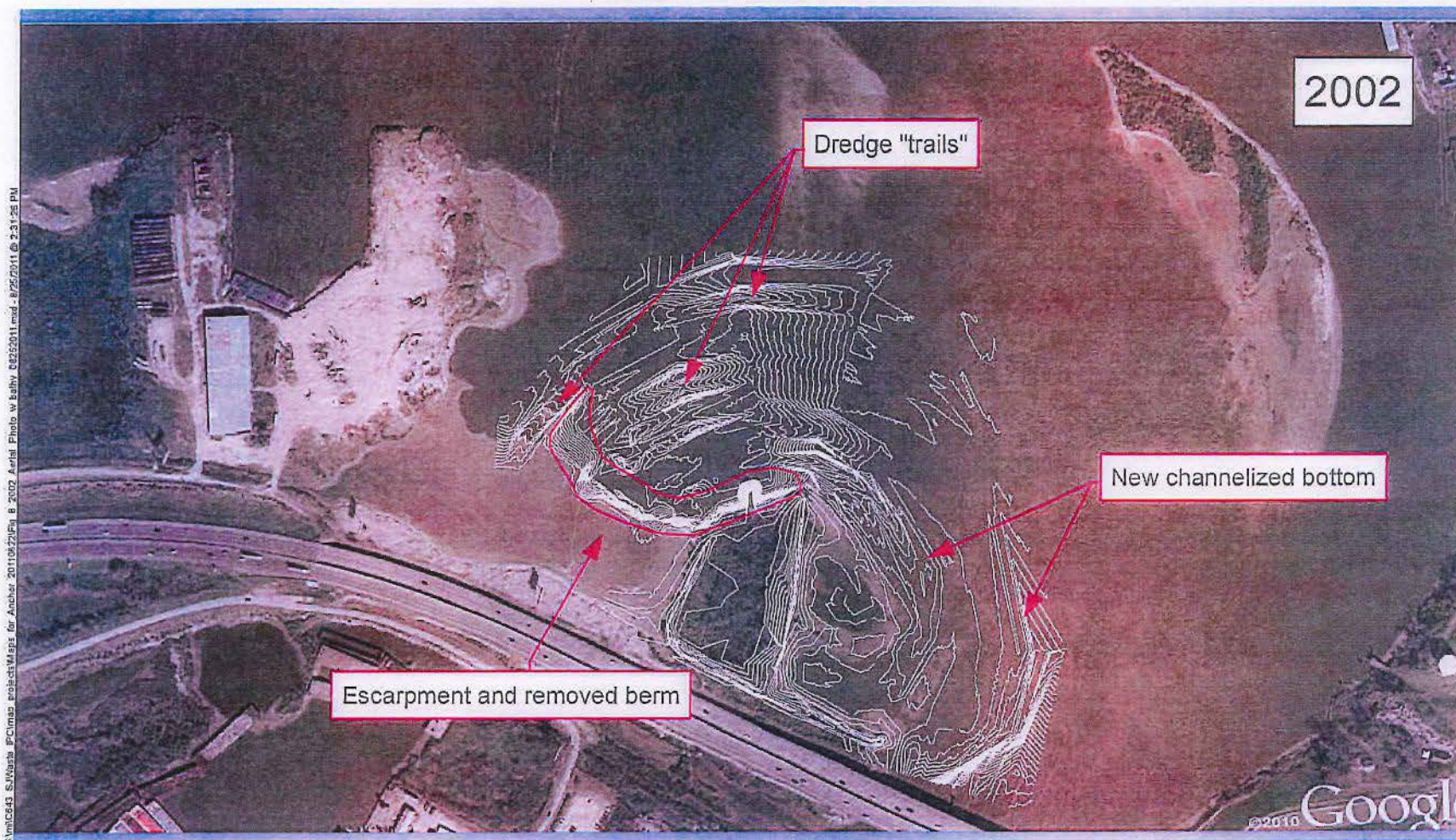


Figure 7
 2009 Aerial Photo
 Impact of Dredging on the San Jacinto Waste Pits TCRA Site
 SJRWP Superfund/MIMC and IPC

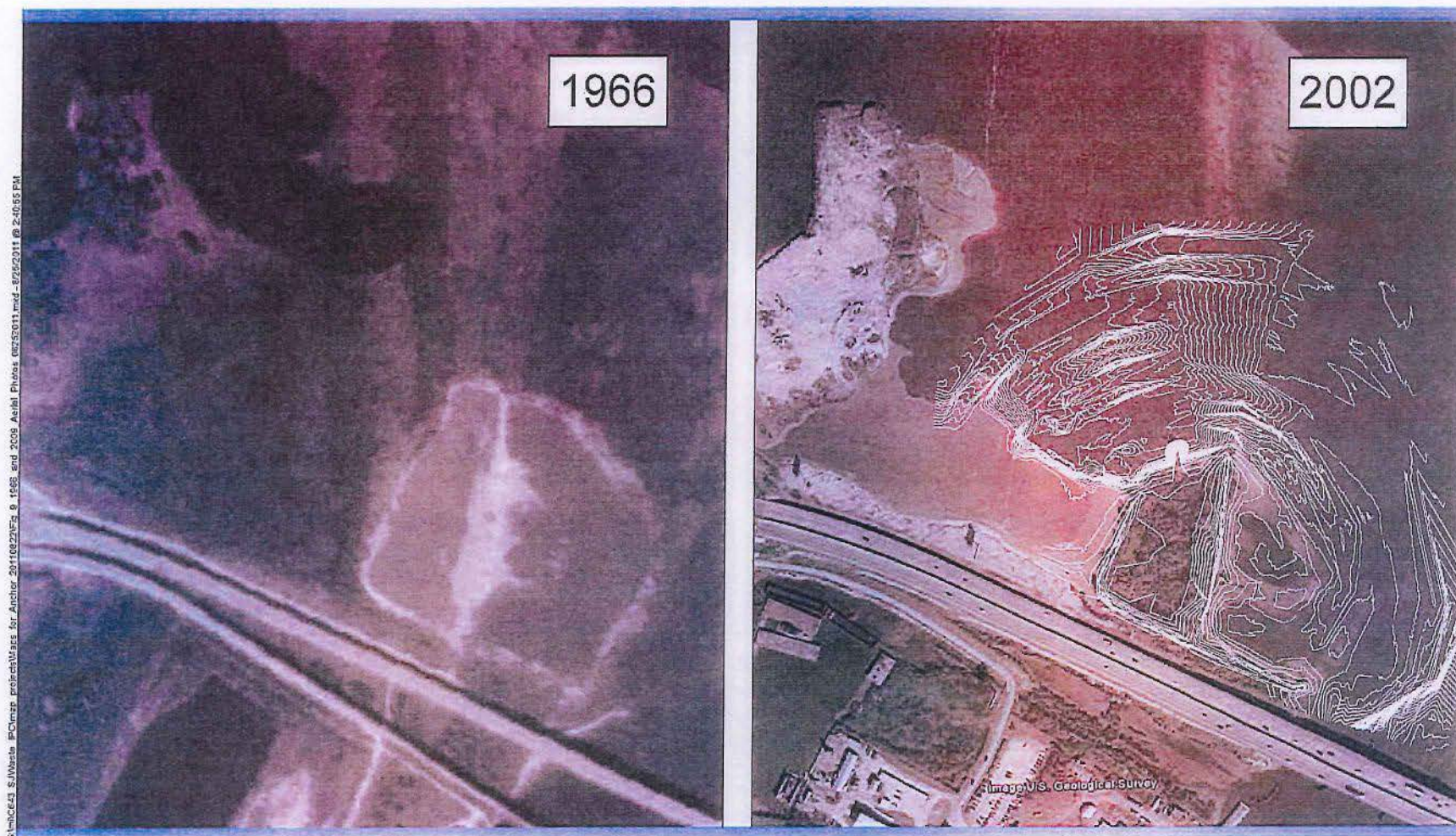


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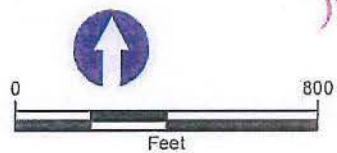
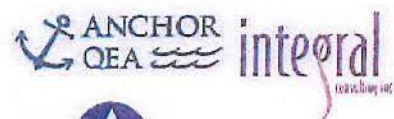


Bathymetry prepared from COE
Horizontal Datum: Texas South Central, NAD83, US Survey Feet
Vertical Datum: NAVD 88
Contour Interval: 1-foot

Figure 8
2002 Aerial Photo
Impact of Dredging on the San Jacinto Waste Pits TCRA Site
SJRWSP Superfund/MIMC and IPC



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Bathymetry prepared from COE
Horizontal Datum: Texas South Central, NAD83, US Survey Feet
Vertical Datum: NAVD 88
Contour Interval: 1-foot

Figure 9
1966 & 2002 Aerial Photos
Impact of Dredging on the San Jacinto Waste Pits TCRA Site
SJRWSP Superfund/MIMC and IPC

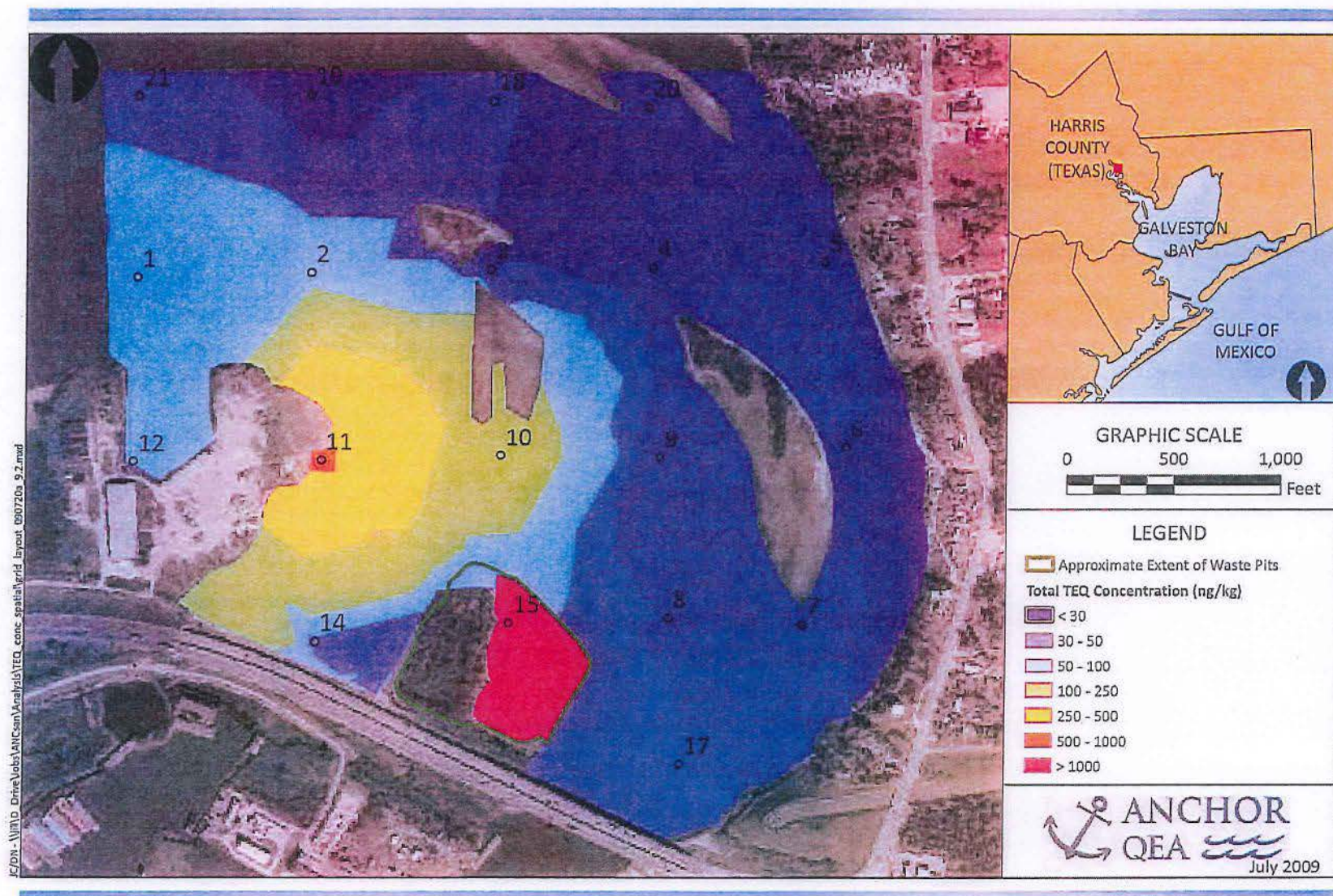
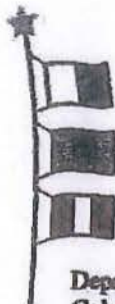


Figure 10
TEQ Concentrations in Surface Sediment Estimated via TIN Interpolation
Impact of Dredging on the San Jacinto Waste Pits TCRA Site
SJRWP Superfund /MIMC and IPC

APPENDIX A

USACE DOCUMENTS

NOV 30 1998



**HOUSTON
INTERNATIONAL
TERMINAL**

November 20, 1998

18001 - 1-10
CHANNELVIEW TEXAS
REPLY TO
2918 GREEN LEE DRIVE
PEARLAND, TEXAS 77581
713-485-2464
J. S. I.

Department of the Army
Galveston District
Corps of Engineers
P.O. Box 1229
Galveston, Texas 77553-1229

Attention: Mr. John Davidson

Re: Permit No. 19284(02)

Dear Sir:

This letter will confirm my past telephone conversations and your personal conversations with Mr. D. Moore of Mega Sand at Houston International Terminal. At this time we would like to reiterate our position which is as follows:

The original permit was issued after much discussion during conferences and meetings with Parker Brothers. As you know Parker merged to form Parker LaFarge which set back our operations by at least a year. Only one(1) barge load was removed by Parker LaFarge.

Parker LaFarge sold out and the new owners closed down the dredging operations and sold off all of their floating equipment.

All of this was done after a mitigation plan was submitted and approved. We were into 1996, and no further dredging was performed during this period.

In late 1997 we entered into a working contract with Mega Sand (Dan & Brenda Moore) who agreed to the mitigation plan. In September 1997 dredging recommenced and work on the mitigation plan started. Work progressed, but has been halted on several occasions by floods and bad weather. In the case of floods, the most recent being November 13, 14, and 15, 1998, the flood waters and currents have caused the removal of some of the material deposited in the mitigation sites.

We will keep Ms. L. Shead advised of the progress, in order that she may advise the Galveston Bay Foundation.

Corps of Engineers
May 28, 1996
Page 2

We are writing at this time to assure the Corps and the Galveston Bay Foundation that our plans have not changed, and if weather permits will continue on course.

Thanking you for your continuing cooperation, we remain,

With Respects,



Capt. Jack Roberts

cc: Mega Sand
Encl. Letter dated 7-30-96
To U.S. Corps / John Moran

JAN 25 2000



**HOUSTON
INTERNATIONAL
TERMINAL**

18001 - 1-10
CHANNELVIEW, TEXAS
REPLY TO:
2918 GREEN ICE DRIVE
PEARLAND, TEXAS 77581
800 / 485-2454

7281

January 24, 2000

United States Corps of Engineers
Galveston, Texas

Attention: Mr. Bruce H. Bennett

VIA Fax 409/766-3931

Re: Permit #19284(2)

Dear Bruce,

It has been a long time since I have been in contact with you or the Corps and after talking to Ms. Tirpak today was pleased to hear that you are well. I have partially retired and as a result may have slipped my anchor concerning the above referenced permit.

Situation:

We received a permit in 1996 to dredge our property, construct a fish nursery with Galveston Bay Foundation and submitted a mitigation plan which was approved.

No work was performed in 1996 and it was late 1997 before operation commenced. Site was inspected by you, Mr. John Davidson and we were contacted by him and the entire operation laid out (See letter dated November 20, 1998, attached).

At this time we respectfully request that this permit be renewed, extended or whatever is required to allow Mega Sand to continue their operation.

Jan. 24 2000 05:43PM P1

FAX NO. : 2014852530

FROM : ROBERTS

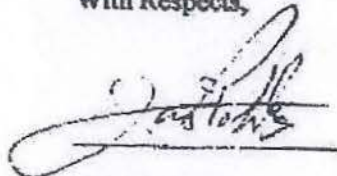
US Corps of Engineers
Page - 2 -

I was under the impression that permits for this type of operation was for five (5) years, but I understand ignorance is not an excuse. However the operation did not start until 9/97 and we suffered delays in 1998.

Upon receipt of this fax and after your review of our problems will you please contact me at 281/485-2464 or fax 281/485-0538.

Thanking you in advance for yours and the Corps usual prompt attention to this matter, remain,

With Respects,



Capt. Jack Roberts

JR:hr

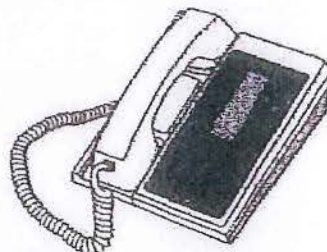
Attachments

CONVERSATION RECORD

DATE: 7 January 02

SUBJECT: Permit Application No. 19284(03)

CONTACT: Jack Roberts



NOTE: Called Mr. Roberts to inform him that I am now the Project Manager for the subject permit application. The previous Project Manager was Kerry Stanley.

I asked Mr. Roberts if the applicant, Houston International Terminal, has reviewed the revised mitigation plan (a more detailed plan) submitted to them by Kerry on 2 August 01. He said that the applicant reviewed the revised plan and is agreeable to it. However, the contracted dredge company has quit, and the applicant cannot advertise for a new dredging company until the subject extension of time is permitted by the Corps.

Mr. Roberts also informed me that they have not heard anything from the Galveston Bay Foundation (GBF) regarding the revised mitigation. The GBF will be assisting in creating the mitigation area. I told Mr. Roberts that I would contact Ms. Shead of the GBF and see if they agree with the revised mitigation plan.

Tracy C. Orr
Tracy C. Orr
Project Manager, North
Evaluation Unit



HOUSTON INTERNATIONAL TERMINAL

MAR 12 2002

18001 - 1-10
CHANNELVIEW, TEXAS
REPLY TO:
2918 GREEN TEE DRIVE
PEARLAND, TEXAS 77581
713 / 485-2484

March 11, 2002

Department of the Army
Galveston District Corps of Engineers
P. O. Box 1229
Galveston, Texas 77553-1229

Attention: Mr. Tracy C. Orr
Project Manager
Evaluation Section

Re: Permit 19284 (03)

Dear Sir:

We are in receipt of your letter of March 4, 2002 concerning the above referenced subject and after reviewing our files would like to advise as follows:

Upon receipt of your letter on March 8, 2002 we called Ms. Linda Shead in order to fill her in on this operation. She advised the writer that she was leaving the G.B.F. but would leave her replacement with all details.

In order to bring the file up to date we would like to advise your office of the past and future performance intended by H.I.T.

We have for the past year or more commenced mitigation Phase I and we are over 75% complete. Finger piers of dirt (clean)(Exhibit "A" attached) are in place and grass planted is growing above expectations. There is dirt in place that will complete this phase. Cost of this operation exceeds \$ 10,000.00 and we feel that this is in line with the estimated removal of sand that everybody agreed upon at the beginning of dredging.

Department of the Army
Galveston District Corps of Engineers
Mr. Tracy C. Orr
March 11, 2002
Page - 2 -

At this time we respectfully request that another meeting be held (H.I.T. representative, new G.B.F. representative, yourself or your representative) in order to move on with this project and to clarify paragraph #3 in your resent letter.

As you are aware the dredging company has pulled off the site and we are seeking another contractor. We can not contract for a royalty company without a permit and without a contractor we do not need to assist G.B.F. with mitigation and further extension of the Nursery which we previously agreed to donate.

In closing let us state that it is our intention, as always, to cooperate and comply with all parties requirements and feel that an immediate inspection, as aforementioned, would clear the air on this matter.

Upon receipt of this letter and after your review we would appreciate a telephone conference (281/485-2464 - Fax 281/485-0538)

Thanking you in advance for your prompt attention to this matter, remain,

Sincerely,

A handwritten signature in dark ink, appearing to read "Jack Roberts - hr". The signature is stylized with a large, looped initial "J".

Capt. Jack Roberts

JR:hr

cc: G.B.F.

GALVESTON
BAY
FOUNDATION

JUL 25 2002

July 23, 2002

Tracy C. Orr
Project Manager
North Evaluation Unit
U.S. Army Corps of Engineers
P.O. Box 1229
Galveston, TX 77553-1229

RE: Permit Application No. 19284 (03)

Dear Mr. Orr:

Please find enclosed our comments concerning the progress of Phase I, II, and III of the proposed nine acre mitigation plan being constructed by the applicant Houston International Terminal (HIT) as previously permitted under permit # 19284(03).

On Thursday, June 20, 2002 two Galveston Bay Foundation (GBF) representatives met with Captain Jack Roberts of HIT along the south bank of the San Jacinto River, just north of the Interstate Highway 10 Bridge, in Channelview, Harris County, Texas, to observe the current state of the mitigation site. It appears that a measurable amount of fill material has been placed into the southern sections of all three mitigation phases at an even elevation. While no official measurements were taken, we estimate that approximately 1,000 linear feet of shoreline, 70-85 feet in width, have been filled-in and built up to an unknown depth (see enclosed before and after photographs). There were no tidal channels or planted vegetation present.

In addition, Captain Roberts shared with us some obstacles that he has encountered while attempting to complete the first phase of the mitigation project. They are as follows:

1. While the intention was to complete the mitigation project in phases corresponding to the amount of dredging accomplished, in actuality a contractor unknowingly placed the fill material into all three phases of the mitigation project simultaneously. As a result, the completion of the phase I mitigation is forthcoming, and HIT will attempt to complete it using dredge material that would be obtained upon receiving an extension of time to complete the work which was previously permitted.
2. As of yet, the elevation required to successfully support the growth of *Spartina*

JUL 26 2002

alterniflora in the phase I mitigation site has not been obtained. The current level of the fill material is too high. HIT had hopes of thinly spreading the material out by pushing it water-ward with a tractor after having deposited it along the coastline, but their equipment has been stuck in the mud several times attempting to do this. HIT now feels that it will be necessary to use a barge to complete the phase I mitigation.

The Galveston Bay Foundation has the following concerns and recommendations regarding the current state of the Phase I mitigation site:

1. The Galveston Bay Foundation is concerned that the requirements stipulated in permit #19284(03) have not been followed. Additionally, when GBF agreed to assist with the proposed mitigation we accepted significant responsibility in the successful development, implementation, and completion of this project, yet we were not consulted concerning its implementation.
 - a. Despite a requirement in the permit there are no brush fences in place on the unprotected side of the mitigation site to encourage the settlement of discharged material at the site. In addition, a discharge pipe was not used to control the deposition of the material. As a result the Foundation believes that the fill material may have been inappropriately placed. After reviewing the before and after pictures of this site, it appears that the fill material may have been placed in an area that was already at an appropriate elevation to grow *Spartina alterniflora*. We believe that a better use of the material would have come from placing the material off of the shoreline using a discharge pipe.
 - b. We are also concerned that all of the fill material was not used for the completion of the phase I mitigation site. We feel that it would be appropriate at this time to move the fill material in Phase II and III to Phase I so that it could be completed.
2. Additionally the Foundation is concerned that in a letter dated April 1, 1996, to the U.S. Army Corps of Engineers Ms. Shead, then the director of the Galveston Bay Foundation, stated,

I am writing to confirm the GBF role in the wetlands mitigation project for permit application 19284 (02) submitted by Houston International Terminal. GBF has agreed to participate in the project provided a conservation easement for the property is granted as well as funding for the nursery creation work. Such an agreement is pending.

Currently, for reasons unknown, we are not aware that any such agreement/contract between GBF and HIT exists. We recommend that a formal conservation easement be signed and that funds for future plantings be agreed upon including appropriate allocations for replanting the site, if that should ever become necessary.

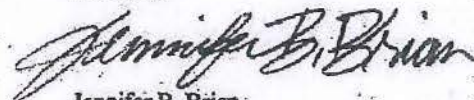
Mr. Ch
7/24/02
Page 3

JUL 26 2002

3. As previously recommended by NMFS we also recommend that a more detailed mitigation plan be created with a feasible associated timeline for the completion of work. Detailed descriptions of the mitigation construction, recontouring, and filling techniques should be included as part of the permit conditions as well as detailed drawings of the proposed mitigation area that depict existing elevations, and contours, target wetland planting area elevations, and the mean low and mean high water levels. All project plans need to be thoroughly discussed with all appropriate parties including the applicant, the U.S. Army Corps of Engineers, NMFS, other state and Federal resource agencies, GBF, and any other contractors that may be working on the project.
4. Finally, GBF is concerned that the dredged material currently being used as fill may not be of an appropriate substrate for marsh restoration. The material appears to be rather coarse and contain some component of gravel/rock. A GEO TECH survey may need to be completed at the site to determine the appropriateness of the material for use in marsh restoration. We request that an extension of the project be granted only after it is determined that the material is appropriate. Additionally, we request that the project be terminated if it is ever found to no longer be economically viable or able to produce material suitable for wetland fill.

In the event that the Corps would grant an extension of time to complete this project we recommend that all of the above concerns be addressed.

Sincerely,



Jennifer B. Brian
Conservation Coordinator

enclosures

APPENDIX B

TYPICAL SAND DREDGING OPERATIONS

Typical sand dredging operations would be performed by a barge mounted pump (dredge) that uses two spuds (legs that reach the bottom) and swing anchors to advance or walk in the dredge cut. Using one spud as a digging spud and the second as a “walking” spud, the dredge can move forward by pulling the bow of the dredge to the side, dropping the walking spud and then reversing the swing, as shown in the figure below from Turner 1984 (Thomas M. Turner, *Fundamentals of Hydraulic Dredging*, 1984).

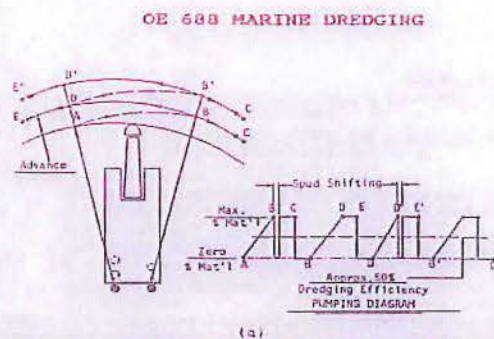


FIGURE 7.7 Operation of a waterhead dredge, spud carriage. The advancing operation of a dredge is a major factor affecting dredge efficiency. These diagrams assume single-level swinging. (a) Walking-working spud arrangement.

Dredge animations and video clips can be viewed on the Ellicott and USACE web sites at the following links:

<http://www.dredge.com/dredge-videos-animations.html>

<http://el.erdc.usace.army.mil/dots/doer/tools.html>

In a sand mining operation, a hydraulic (pump) cutterhead dredge is used to excavate and transport the material via a water slurry to a processing facility. The dredge cutterhead shears the material so that the hydraulic pump can mix the sediments with water and transport the slurry in a pipeline. At the processing facility, the sand and water mixture is dispersed in a pond to cause the sediments to fall out of suspension. A typical separating plant can be as simple as a diked area that will slow the transported slurry to allow the sediment to deposit while decanting the water and very fine materials, leaving the sand/aggregate as a product to be sold for concrete, mortar, plaster, and other building projects. The larger particles, due to their density settle first, followed by sequentially finer

particles as the distance from the discharge increases and the slurry velocity decreases. The effluents can contain the very fine clay and silt particles as they are discharged from the separating area through a weir or other structure that is used to control the effluent velocity. The figure below comes from the USACE design manual EM 1110-2-5027 and shows the basic functions of the confined placement area. If the separating area is too small, and the slurry velocities do not decrease sufficiently, the smaller particles will exit the site through the weir.

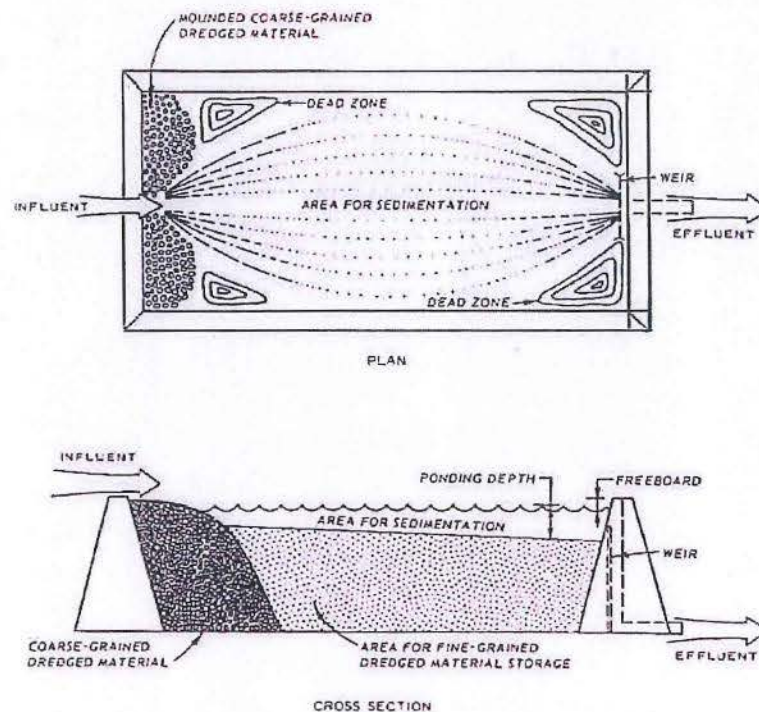


Figure 1-1. Conceptual diagram of a dredged material containment area

Extracted from EM 1110-2-5027 Engineering and Design of Confined Disposal of Dredged Material September 1987.